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Case No.: 58985US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	AUFDERHEIDE, Brian		
Application No.:	10/686,141	Group Art Unit:	2871
Filed:	October 15, 2003	Examiner:	Rude, Timothy L.
Title:	PATTERNED CONDUCTOR TOUCH SCREEN HAVING IMPROVED OPTICS		

APPELANT'S REPLY BRIEF

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Reply Brief is presented in response to the Examiner's Answer dated June 12, 2008, which responded to Appellant's Appeal Brief dated February 22, 2008.

It is believed that no fee is due for filing this Reply Brief. Any additional fees/overages should be charged to Deposit Account No. 50-0996 **(3MMM.617PA)**.

APPELLANT'S REPLY TO EXAMINER'S ANSWER

The Examiner's Answer delineates seven responses to arguments made in Appellant's Appeal Brief. Appellant's reply to each is provided in the numbered sections below. By way of summary, Appellant submits that the Examiner's responses are largely matters of opinion unsupported by any evidence in the record and appearing to be impermissibly based on hindsight. The Examiner seeks to include one layer of an unpatterned multilayer stack disclosed by Saif into the patterned touch screen construction of Greanias (admitted to lack such a layer), allegedly motivated by improving adhesion, even though the Greanias reference already includes adhesive layers sufficient for such purposes. The Examiner insists that the layer plucked from Saif would remain unpatterned underneath the patterned conductor of Greanias without substantiating why or how one of skill in the art would do so. As such, insufficient support exists for the Examiner's contention that Appellant's claimed structure and materials result from the proposed combination. The failure to provide adequate support breaks the Examiner's argumentative chain, which in turn undermines any assertion that Appellant's refractive index recitations necessarily flow from the same structure. Moreover, the Examiner has merely assumed that all films and coatings of the same or similar materials will have the same refractive index, ignoring the fact that refractive index varies depending on particular material composition as well as layer thickness. The following discussions address each of these matters in the context of the Examiner's Answer.

1. Impermissible Hindsight

The Examiner's Answer first responds to Appellant's argument that the Examiner has impermissibly used hindsight to reconstruct Appellant's invention from the applied references. In so responding, the Examiner merely states that the teachings provided in the secondary Saif reference are sufficiently robust to motivate modification of the primary Greanias reference. This sidesteps the hindsight issue, which is better focused on whether the references could be properly combined to result in Appellant's claimed structure as opposed to the sufficiency of the motivation.

Appellant has argued that any combination of Greanias with Saif would at least seek to retain the benefits provided by Saif, notably the reduction of reflections. The Examiner's own statement of motivation is in agreement: "[I]t would have been obvious … to modify the invention of Greanias with the coating [of Saif] … in order to reduce unwanted reflections when used as a touch panel over a display." *See* page 4 of Final Office Action dated August 13, 2007. As Appellant has stated, the reduction of reflections does not occur from a single layer, but from the interplay of multiple layers resulting in optical interference effects. Appellant has therefore submitted that the Examiner's proposed modification impermissibly removes one layer of a functional multilayer stack for inclusion in a different arrangement that, as a result, just happens to look like Appellant's claimed structure. What the Examiner fails to appreciate is that the proposed manner of modification does not retain the benefits of Saif. Appellant submits that an obviousness rejection cannot be based on the motivation of achieving a benefit that is not in fact achieved in the combination. In attempting such logical gymnastics, the Examiner has dismissed the more straightforward alternative hypothesized by Appellant, which involves the incorporation of patterned antireflective stacks, thereby retaining the alleged benefits of adhesion and reduced reflection.

Appellant therefore submits that the modifications proposed by the Examiner have been colored by the knowledge of Appellant's claimed structure without due consideration for what is fairly taught by the references. Such use of hindsight is impermissible, and the resulting rejection is improper.

2. Proposed Combination Fails to Teach All the Elements

The Examiner's Answer next responds to Appellant's argument that the proposed combination fails to teach all the features recited in Appellant's claims. In particular, the Examiner contends that Appellant has attacked the references individually. On the contrary, Appellant's arguments have been based on what the references fairly teach as a whole, which the Examiner conveniently ignores. For example, the Examiner's argument is based on selecting a portion of Saif's anti-reflective stack and inserting it between existing elements of Greanias without regard for the resulting inability to achieve the benefits of the argued motivation to combine in the first place. Appellant submits that the Examiner has selected only those portions of the references deemed supportive of the rejection while ignoring the teachings of the references as a whole, contrary to settled law. *See, e.g.*, M.P.E.P. § 2141.02, stating "A prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention." Appellant further submits that it is entirely appropriate for an applicant to note the deficiencies of the primary reference and to point out how the secondary reference fails to cure or otherwise address those deficiencies.

3. Saif Does Not Teach Patterning

The Examiner's Answer next responds to Appellant's argument that Saif fails to teach patterning, and merely responds that Greanias does teach patterned conductive lines. Such response ignores the substances of Appellant's arguments. Appellant has observed that Greanias discloses patterned conductors without the undercoating recited in the claims. Appellant has also observed that Saif includes no teaching or suggestion of patterning. The Examiner has never addressed how such teachings could result in a mixed patterned and unpatterned construction, particularly when Saif provides no teaching or suggestion that any of the layers in the multilayer functional stack is separable or could be dealt with individually to result in the claimed construction which has a patterned layer sandwiched between unpatterned layers.

4-5. Saif Derives Antireflective Properties from Stack as a Whole

The Examiner's Answer next responses are to Appellant's argument that the functional aspects of Saif's antireflective stack do not flow from a single layer, but from interaction among all the layers. The Examiner argues that, "[a]dding an index of refraction matched layer between the conductive line [of Greanias] and the underlying substrate will reduce reflections despite any and all other layers…." Appellant submits that this statement is erroneous conjecture and unsupported by any evidence in the record. Moreover, Appellant's claims do not recite an index matched layer between the patterned conductor and the substrate, but rather an index mismatched layer. Regardless, the optical behavior of layers does not result merely from refractive index properties, but from layer thickness in dependence on neighboring layers. Appellant submits that there is nothing in the Greanias reference to lead one of skill in the art to expect that antireflective properties could result between the patterned conductor and an adjacent layer. On the contrary, Greanias discloses that the transparent conductors have a thickness of 60 to 160 nm (*see, e.g.,* Col. 18:16-17), whereas Saif discloses that the transparent conductor disposed on the silicon oxide primer is 25 nm (*see, e.g.,* Col 7:29-30). One of skill in the art would not expect the same optical behavior from a layer that is made 2 to 6 times thicker.

6. Patterning the Antireflective Stack of Saif is the Logical Result

The Examiner's Answer next responds to Appellant's argument that the logical result of the Examiner's proposed combination is to pattern Saif's entire antireflective stack, not to remove one layer and place it within the construction of Greanias. In response, the Examiner argues that because Greanias discloses patterning of the conductive layer and Saif teaches a primer layer for good adhesion, it would be obvious to use them together. As Appellant has noted, the construction of Greanias is held together using adhesive layers, and thus one of skill in the art would not expect any additional adhesion benefits from the inclusion of a layer from the Saif reference. Moreover, any benefits from reduced reflections are immediately surrendered by using just the single layer from the Saif reference. Appellant submits that patterning the full stacks of Saif in the construction of Greanias would preserve both benefits alleged by the Examiner to be motivating of the combination, that of adhesion and reduce reflections. As discussed above, the Examiner's hindsight-induced combination does not so preserve the benefits sought from the alleged motivation.

The Examiner further argues that one of skill in the art would not pattern multiple layers because patterning costs time and money, and therefore patterning more layers would cost more time and more money. Appellant submits that such a statement is a matter of opinion unsupported by any evidence in the record. There is simply no basis to say that it would be any easier to pattern only one layer (ITO) while leaving underlying layers (silicon oxide) unpatterned than to pattern all the functional layers, for example in a single step. Moreover, the Examiner's proposed motivation for the combination is not based on cost savings, but on achieving certain functionalities, which Appellant has shown are either superfluous or left unachieved by the Examiner's proposed combination.

7. Improper Hindsight Revisited

The Examiner's Answer lastly responds to Appellant's argument that hindsight has been impermissibly used by the Examiner to select just the right layer from Saif and just the right positioning within the Greanias construction to suit the Examiner's purposes. According to the Examiner, one of skill in the art would select the silicon oxide primer layer of Saif for inclusion in the construction of Greanias for its adhesion promoting properties and for its refractive index and reflection reducing properties. As Appellant has explained, Greanias already provides adequate adhesion function, and the reflection reducing properties would not result from use of Saif's silicon oxide layer with Greanias's conductor. It appear to Appellant that the Examiner has impermissibly used hindsight, thereby ignoring a hypothetical construction that would achieve the goals of the Examiner's articulated motivation (albeit suffering the same admitted deficiencies as the primary reference) in favor of a construction that the Examiner argues to read on Appellant's claims. Such hindsight has allowed the Examiner to pick and choose elements without regard for the teachings of the references as a whole, and without regard for the functional result.

CONCLUSION

In view of the above, Appellant submits that the proposed combination fails to teach or suggest all the recited claim elements, that the Examiner has impermissibly used hindsight in determining that the references would be combined and modified improperly in an attempt to reach Appellants' invention, and that the Examiner has impermissibly failed to consider the teachings of the references as whole. Therefore, Appellant submits that the § 103 rejection of claims 1-13, 20-24, 26, 28, 32, 34, 35, 37 and 38 should be reversed, and requests favorable decision from the Board.

Respectfully submitted,

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